

Work Order ID 47064

June 26, 2009 11:43:34 AM

*powder
coating
21/05/09*



Page 1

Item ID: D3391-023
Revision ID: H
Item Name: Mid Tube Assembly

Accept



Setup Start



Stop



Start Date: 15/07/2009 Start Qty: 1.00

Required Date: 03/08/2009 Req'd Qty: 1.00



Cust Item ID:

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
----------	--------------

D3391	Rev H
-------	-------

100

0.00



Skidtubes

Skidtubes

Memo

0.00

Skidtubes

1-Cut tube to finish length as per Dwg D3391 2-Identify as D3391-023 3-Drill pilot holes using DT8796 (Do not drill "B" holes) and drill only 1 fwd saddle hole on one side only as per Dwg D3391 4-Open saddles and GHW holes to Ø0.375" except for fwd saddle

110

0.00



QC5- Inspect part completeness to step on W/O

QC

Memo

0.00

Quality Control

120

0.00



Chemical Conversion Coat per QSI005 4.1

HandFinish

Memo

0.00

Hand Finishing

Work Order ID 47064

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Page 2

Item ID: D3391-023
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Accept



Setup Start



Stop



Start Date: 15/07/2009 Start Qty: 1.00



Required Date: 03/08/2009 Req'd Qty: 1.00



Cust Item ID:

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

140

Skidtubes

0.00



Skidtubes

Memo

0.00

Skidtubes

1-Open float bag holes as per dwg 2-C'sink float bag holes as per dwg 3-
Prepare tube for welding 4-Bond web in place as per Dwg D3391 & QSI
015. Adhere for 12 hours)



150

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control



[illegible]

Page 3



10/10



Customer:

[illegible][illegible]

Date:

**Insp.
Stamp**

0.00



Skidtubes

0.00

Skidtubes

Memo

Skidtubes

1-Weld crossbolt spacer as per dwg D3391 & QSI 004 (2-grind weld flush)

170

[illegible]

QC10- Inspect visual per QSI004- ground welds

0.00

QC

Memo

0.00

Quality Control

180

[illegible]

QC5- Inspect part completeness to step on W/O

0.00

QC

Memo

0.00

Quality Control

Work Order ID 47064

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Page 4

Item ID: D3391-023
Revision ID: H
Item Name: Mid Tube Assembly

Accept



Setup Start



Stop



Start Date: 15/07/2009 Start Qty: 1.00
Required Date: 03/08/2009 Req'd Qty: 1.00



Cust Item ID:
Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

190



Powdercoat

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

Memo

0.00

Powder Coating

START TIME: _____ OVEN TEMPERATURE: _____

FINISH TIME: _____

200



QC

Quality Control

QC3- Inspect Part Finish

0.00

Memo

0.00

210



Skidtubes

Skidtubes

Skidtubes

0.00

Memo

0.00

1- insert D3391-021 into D3391-237 2- insert T-pins into first and third fwd saddle holes 3- ON FIRST SIDE ONLY drill out 2nd and forth fwd saddles holes to 0.500" as per DSI 9364 4- remove T-pins and locate DT9415 from first and third crossbolt hole using



BR 09-07-7.

BR/MD 09/07/07

Work Order ID 47064

June 26, 2009 11:43:34 AM



Page 5

Item ID: D3391-023
Revision ID: H
Item Name: Mid Tube Assembly

Accept



Setup Start



Stop



Start Date: 15/07/2009 Start Qty: 1.00



Required Date: 03/08/2009 Req'd Qty: 1.00

Cust Item ID:

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

220

QC5- Inspect part completeness to step on W/O

0.00

⇒ 809107/08



QC

Memo

0.00

Quality Control

230

HandFinishing

0.00

BR/MD 09-07-7



HandFinish

Memo

0.00

Hand Finishing

Install Inserts as per Dwg

240

QC5- Inspect part completeness to step on W/O

0.00

⇒ 809107/08 @



QC

Memo

0.00

Quality Control

Work Order ID 47064

June 26, 2009 11:43:34 AM



Page 6

Item ID: D3391-023
Revision ID: H
Item Name: Mid Tube Assembly

Accept



Setup Start



Stop



Start Date: 15/07/2009 Start Qty: 1.00
Required Date: 03/08/2009 Req'd Qty: 1.00



Cust Item ID:
Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:
QC: Date: SPC (Y/N): Date:

Run Start
Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

250

Identify as per dwg & Stock Location: _____

0.00



Packaging

Memo

0.00

Packaging

260

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

#D412-742-043
B 47883 MF
09-07-29

09/07/16

MF 09-07-15

Picklist Print

June 26, 2009 11:31:19 AM

Page 1

Work Order ID: 47064

Parent Item: D3391-023RevH

Parent Item Name: Mid Tube Assembly

Comments:

Start Date: 15/07/2009

Required Date: 03/08/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
ALS4-1032-130		Purchased	No			100	Each	0.0000	22.0000			
* Insert												
✓ D2500-1-100RevU/R		Manufactured	No			100	Each	0.0000	1.0000			
✓ Skidtube Extrusion												
D3391-021RevH		Manufactured	No			140	Each	0.0000	1.0000			
✓ Fwd Tube Assembly												
D3389-1RevD		Manufactured	No			160	Each	0.0000	1.0000			
✓ Web												
D3681-1RevA		Manufactured	No			210	Each	0.0000	5.0000			
✓ Spacer												
D3591-1RevB		Manufactured	No			230	Each	0.0000	2.0000			
* Bushing												



M110511(x20) LMO 09/07/07

B43172

LMO 09/07/07

Date: Tuesday, 07/04/2009 3:19:34 PM
 User: Julie Dawson

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : MID TUBE ASSEMBLY
Job Number : 47064	
Estimate Number : 10469	
P.O. Number :	Part Number : D3391023
This Issue : 07/04/2009 S.O. No. :	Drawing Number : D3391 REV H
Prsht Rev. : NC	Project Number : N/A
First Issue : // Type : SKIDTUBES	Drawing Revision : H
Previous Run : 46985	Material :
Written By :	Due Date : 27/04/2009 Qty: 1 Um: Each
Checked & Approved By : <u>Julie Dawson</u>	
Comment :	
Est. A 05.10.20 New Issue KJ/EC	
Est. B 06.02.10 ECN773 dwg rev.D EC	
est C 07.03.20 rev F dwg EC	
est D 07.03.28 re-format EC	
est E 07.10.31 ecn 1053P EC	
Est Rev:F ECN 1056 07-11-13 DD verified by: EC	
Est Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC	
Est Rev:H 08-09-10 revH as per dwg DD verified by:EC	
Est Rev: I 08-11-13 Removed steps per w/o, QC KJ verified by: ec	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0	D25001100	Skidtube Extrusion
-----	-----------	--------------------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

SKIDTUBE EXTRUSION

Pick:

Qty	Part Number	Description
1	D2500-1-100	Extrusion

Batch

B 37065

D

M 9-4-22

2.0	D3391021	Fwd Tube Assembly
-----	----------	-------------------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Fwd Tube Assembly

Batch:

B 47306

M 9-4-22

Not pulled yet / not closed.

3.0	SKIDTUBES 1	SKIDTUBESS RESOURCE 1
-----	-------------	-----------------------



Comment: LANDING GEAR RESOURCE 1

1-Cut tube to finish length as per Dwg D3391

2-Identify as D3391-023

3-Drill pilot holes using DT8796 (Do not drill "B" holes) and drill only 1 fwd saddle hole on one side only as

M 9-4-22

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 07/04/2009 3:19:34 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: MID TUBE ASSEMBLY

Job Number: 47064

Part Number: D3391023

Job Number:



Seq. #:

Machine Or Operation:

Description :

per Dwg D3391

4-Open saddles and GHW holes to Ø0.375" except for fwd saddle hole of detail "J"

5-Remove .030" from Fwd indexing Ridge as per Dwg D3391

6-Remove indexing ridge on Fwd & Aft end of skidtube as per Dwg D3391

7-Deburr

8-Drill #30 pilot holes using wearplate Jig DT8217 Identify Ø0.250" holes with paint marker,

9-Open wearplate holes of D3391-023 assembly detail section G-G to Ø0.250" (14 holes) as per Dwg D3391 and 2 holes in section Detail "J", do not open wearplate holes of section "J"

10-Open wearplate holes of D3391-023 assembly detail section H-H to Ø0.297" (20 holes) as per Dwg D3391

11-Open .375" holes to .438" ***do not open fwd saddle holes***

12-Locate D3391-021 in D3391-023 at 9.00" (see view z-z)

13- Transfer drill one fwd saddle hole only to .188" dia, transfer drill all remaining fwd saddle holes using DT 8149 locating from previously drill .188" dia hole, using t-pins and clicos to ensure perfect allingment, open up previously tranfer drilled pilot holes in D3391-023/-021 to 0.438" dia. in D3391-021

14- Transfer drill 2 wearplate holes into D3391-021 using DT8217, locating from two previously drilled holes, drill remaining wearplate holes into D3391-021.

15- Locating from two fwd wearplate holes drill remaining 6 wearplte holes in D3391-021 using DT8937

16- Open 2 fwd wearplate holes in D3391-023 to .250" dia.

17- counterbore two aft wearplate holes in D3391-021 as per dwg

18- Open 12 wearplate holes in D3391-021 to 0.297" dia.

19-Deburr and blow out all chips from inside tube

4.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S. Orlan/29 (H)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 07/04/2009 3:19:34 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: MID TUBE ASSEMBLY

Job Number: 47064

Part Number: D3391023

Job Number:



Seq. #: Machine Or Operation: Description :

5.0 HAND FINISHING1 HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1
Chemical Conversion Coat as per QSI 005 4.1

M 09-04-29

6.0 QC3 INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

S 09/04/30

7.0 D33891 Web



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEB

Pick:

Qty Part Number Description Batch

1 D3389-1

Web

648259.7

M 9-4-29

A/R

Sikaflex-241/-291

111088

Sikaflex expire date:

12-1-7

Start: *9-4-29* Time: *4:05*

Finish: *9/4/30* Time: *7:15am*

8.0 SKIDTUBES 1 SKIDTUBE S RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Open float bag holes as per dwg

2-C'sink float bag holes as per dwg

3- Prepare tube for welding

4-Bond web in place as per Dwg D3391 & QSI 015.
Adhere for 12 hours)

M 9-4-29

9.0 QC5 INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 09/04/30

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 07/04/2009 3:19:34 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: MID TUBE ASSEMBLY

Job Number: 47064

Part Number: D3391023

Job Number:



Seq. #:

Machine Or Operation:

Description :

10.0

D36811

Spacer



Comment: Qty.: 5.0000 Each(s)/Unit Total: 5.0000 Each(s)

SPACER

batch:

246107 BE 09/04/30

11.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Weld crossbolt spacer as per dwg D3391 & QSI 004

2-grind weld flush

pm 09-04-30(1)

BE 09/04/30

A/R 110972

12.0

QC10

VISUAL INSPECTION OF GROUND WELDS



Comment: VISUAL INSPECTION OF GROUND WELDS

S 09/04/30 @

13.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 09/04/30 @

14.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

START TIME:

7:30

OVEN TEMPERATURE:

320°

FINISH TIME:

8:00

m 111472 Pressure Wash

MD 09/05/00 (X1)

MD 09/05/00

15.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

BL 09-07-07 D.

16.0

D35911

Bushing



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

Bushing

B 43172

MD 09/07/07

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 07/04/2009 3:19:34 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: MID TUBE ASSEMBLY

Job Number: 47064

Part Number: D3391023

Job Number:



Seq. #:

Machine Or Operation:

Description :

17.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: SKIDTUBESS RESOURCE 1

1- insert D3391-021 into D3391-23

2- insert T-pins into first and third fwd saddle holes

3- ON FIRST SIDE ONLY drill out 2nd and forth fwd saddles holes to 0.500" as per DSI 9364

4- remove T-pins and locate DT9415 from first and third crossbolt hole using T-pins and clekos

5- ON 2ND SIDE ONLY ream out 2nd and forth saddle hole to 0.499". Remove DT9415

6- deburr, re-alodine and blow out chips

7- press fit D3591-1 spacers using DT9416 starting from 0.500" side

BR/LMD 09/07/07

18.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S09/07/08 @

19.0

ALS41032130

Insert



Comment: Qty.: 22.0000 Each(s)/Unit Total : 22.0000 Each(s)

INSERT

*

batch: M110511 (x20)

or equivalent

per QSI 017

BR/LMD 09/07/07

20.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Install Inserts as per Dwg

BR/LMD 09/07/07

21.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S09/07/08 @

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 07/04/2009 3:19:34 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: MID TUBE ASSEMBLY

Job Number: 47064

Part Number: D3391023

Job Number:



Seq. #:

Machine Or Operation:

Description :

22.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: _____

23.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



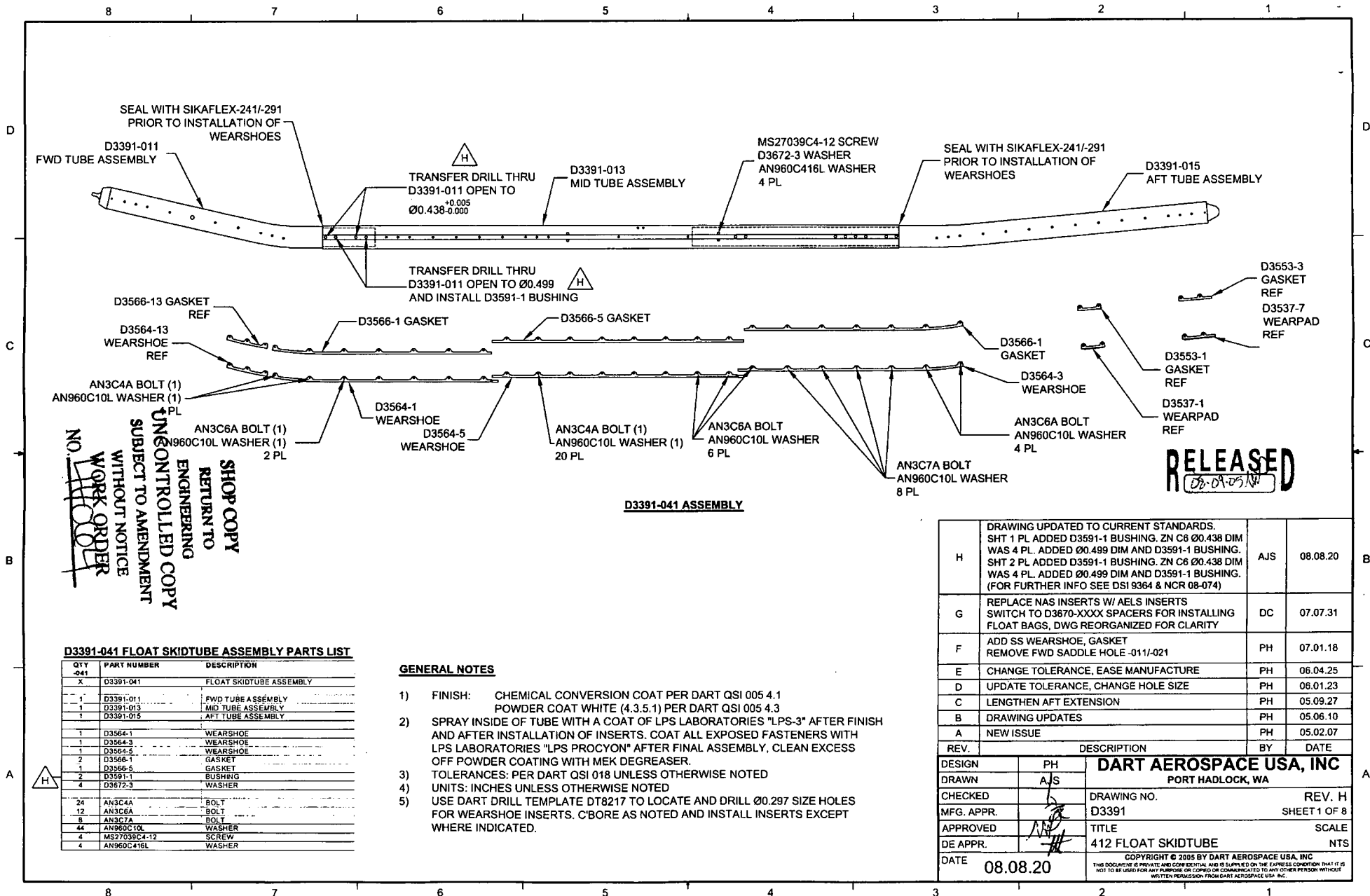
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

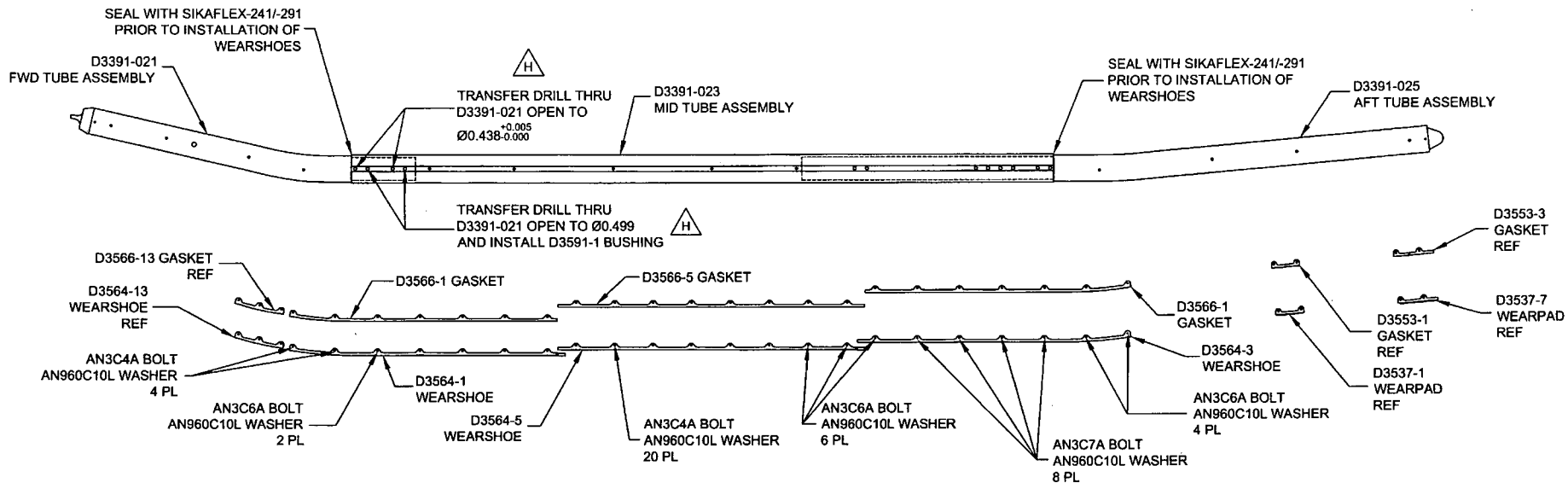
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries





D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
2	D3566-5	GASKET
2	D3561-1	BUSHING
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

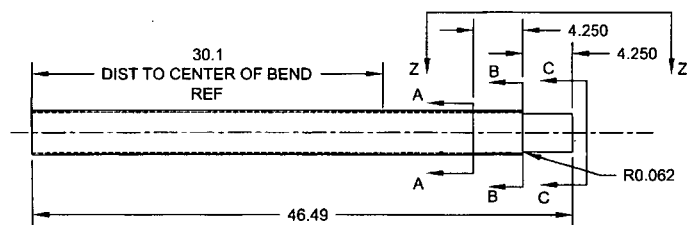
GENERAL NOTES

- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

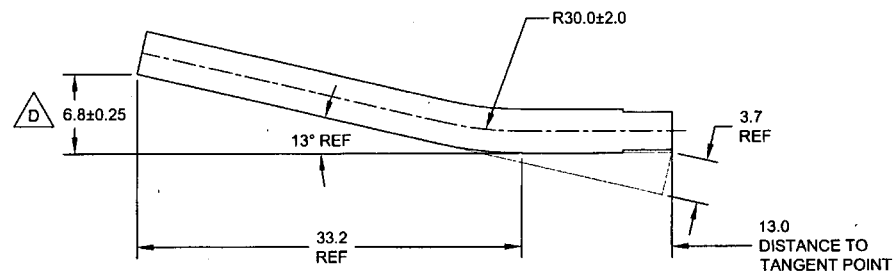
RELEASED
08-09-25-108

DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. H
MFG. APPR.		D3391	SHEET 2 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMERCIALIZED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

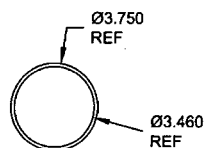
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 1087



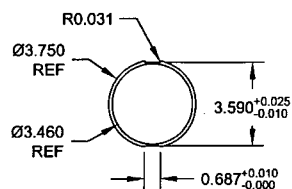
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



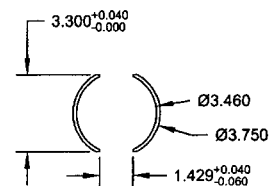
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



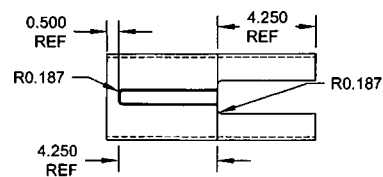
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SECTION B-B
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SECTION C-C
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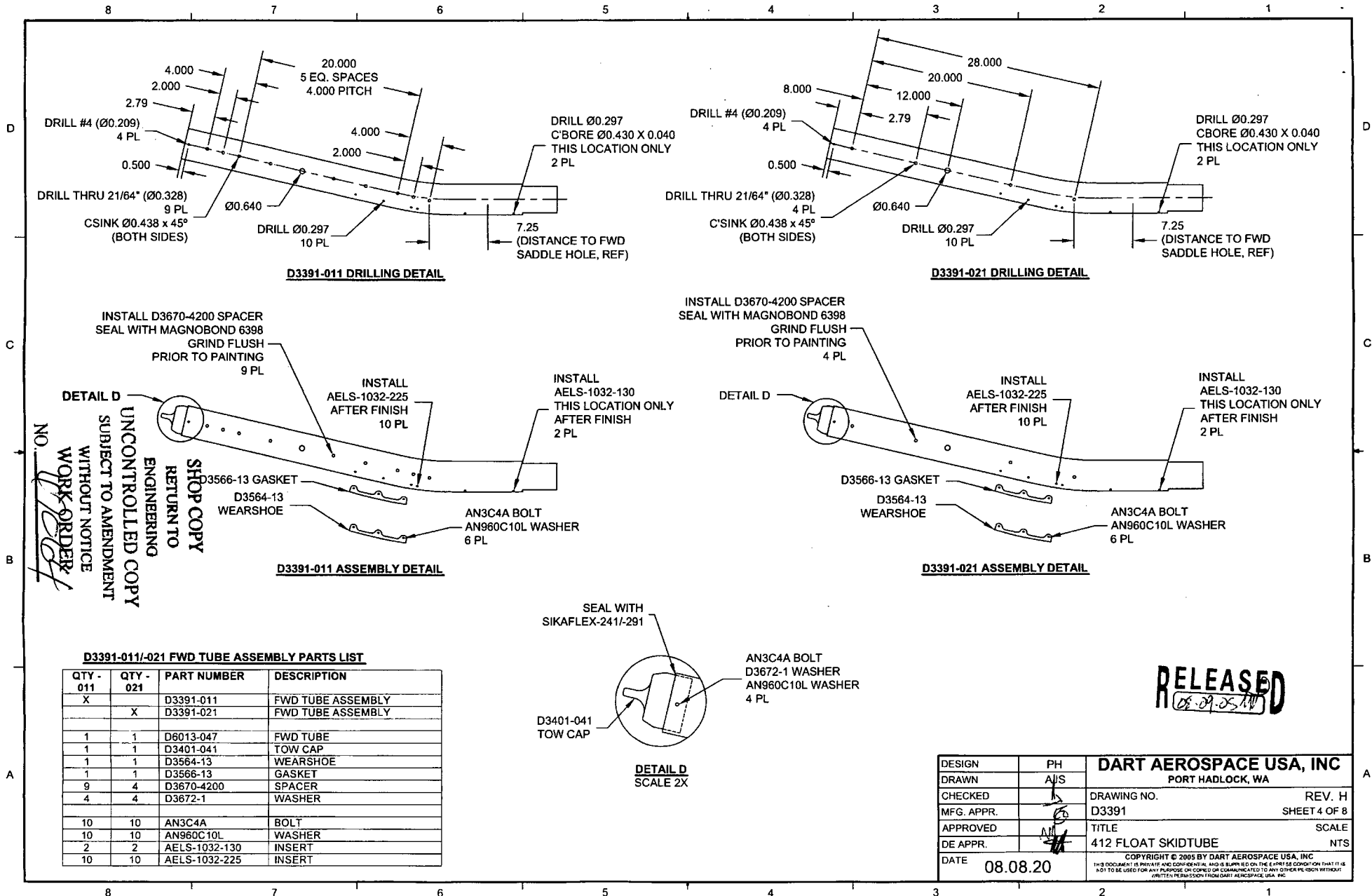


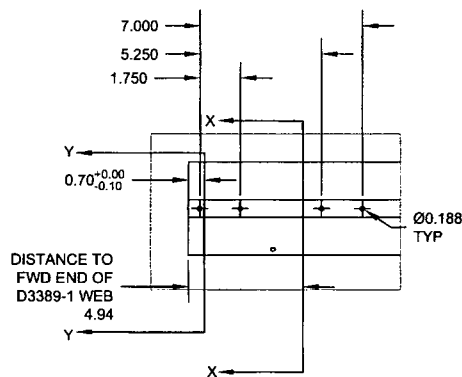
VIEW Z-Z
SCALE 2X

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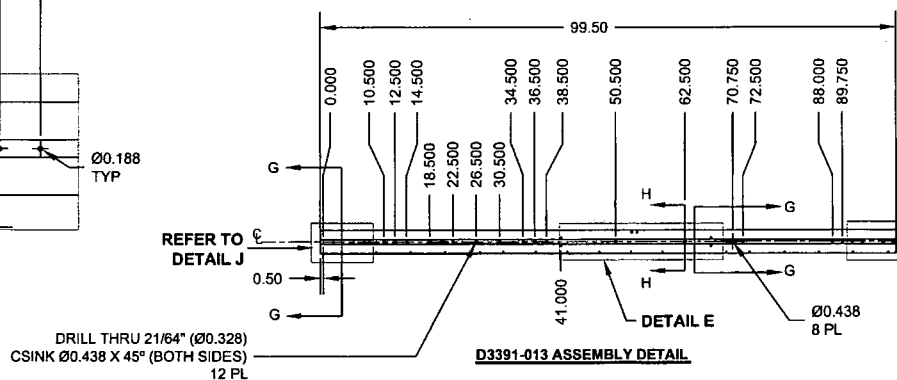
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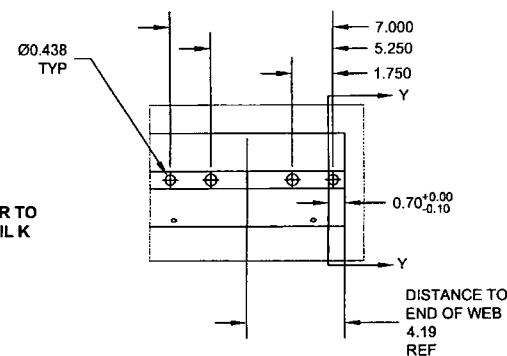




DETAIL J
SCALE 4X



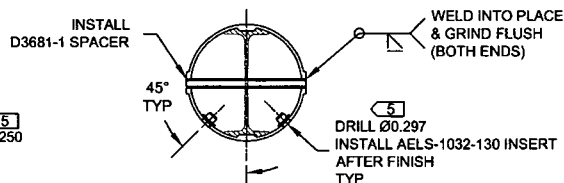
D3391-013 ASSEMBLY DETAIL



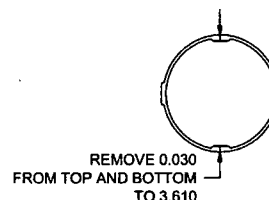
DETAIL K
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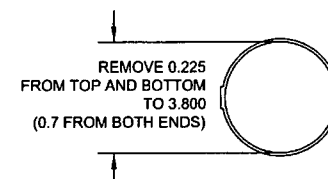
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



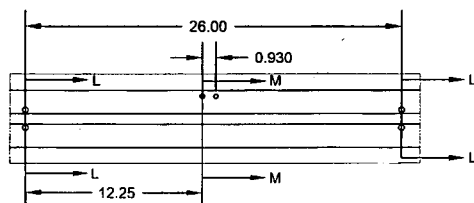
SECTION X-X
SCALE 5X



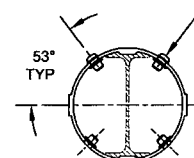
SECTION Y-Y
SCALE 5X

D3391-013 MID TUBE ASSEMBLY PARTS LIST

QTY -013	PART NUMBER	DESCRIPTION
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW

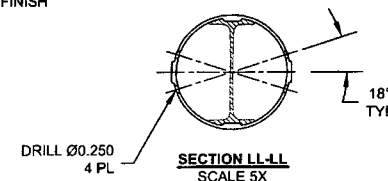


DETAIL E
SCALE NONE



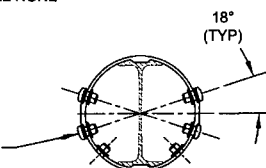
SECTION M-M
SCALE 5X

DRILL Ø0.297
INSTALL AELS-1032-130 INSERT
MS27039C1-09 SCREW
D3672-1 WASHER
AN960C10L WASHER
AFTER FINISH
4 PL



SECTION LL-LL
SCALE 5X

DRILL Ø0.391
INSTALL ALS4-428-165 INSERT
MS27039C4-08 SCREW
D3672-3 WASHER
AN960C416L WASHER
AFTER FINISH
4 PL



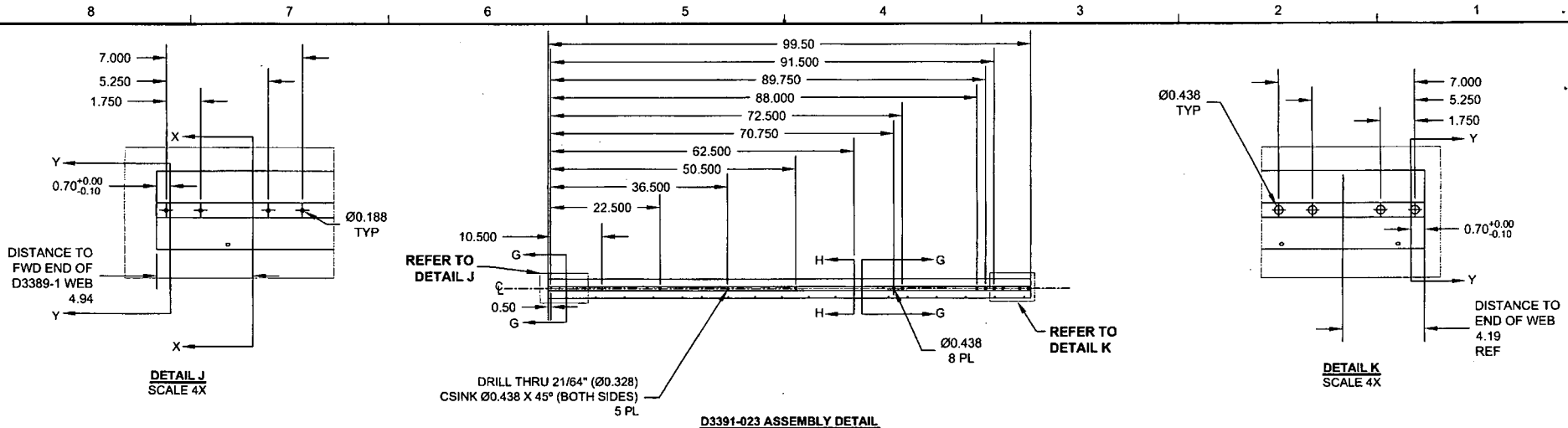
SECTION LL
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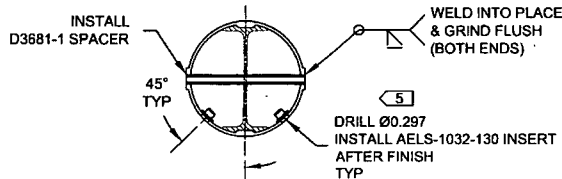
D3391-013 MID TUBE ASSEMBLY
1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
WELDING: PER DART QSI 004

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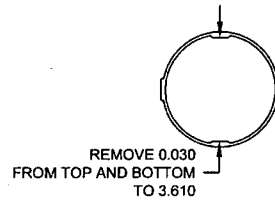
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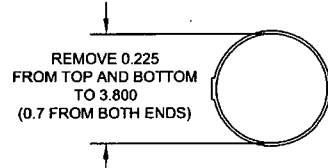
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

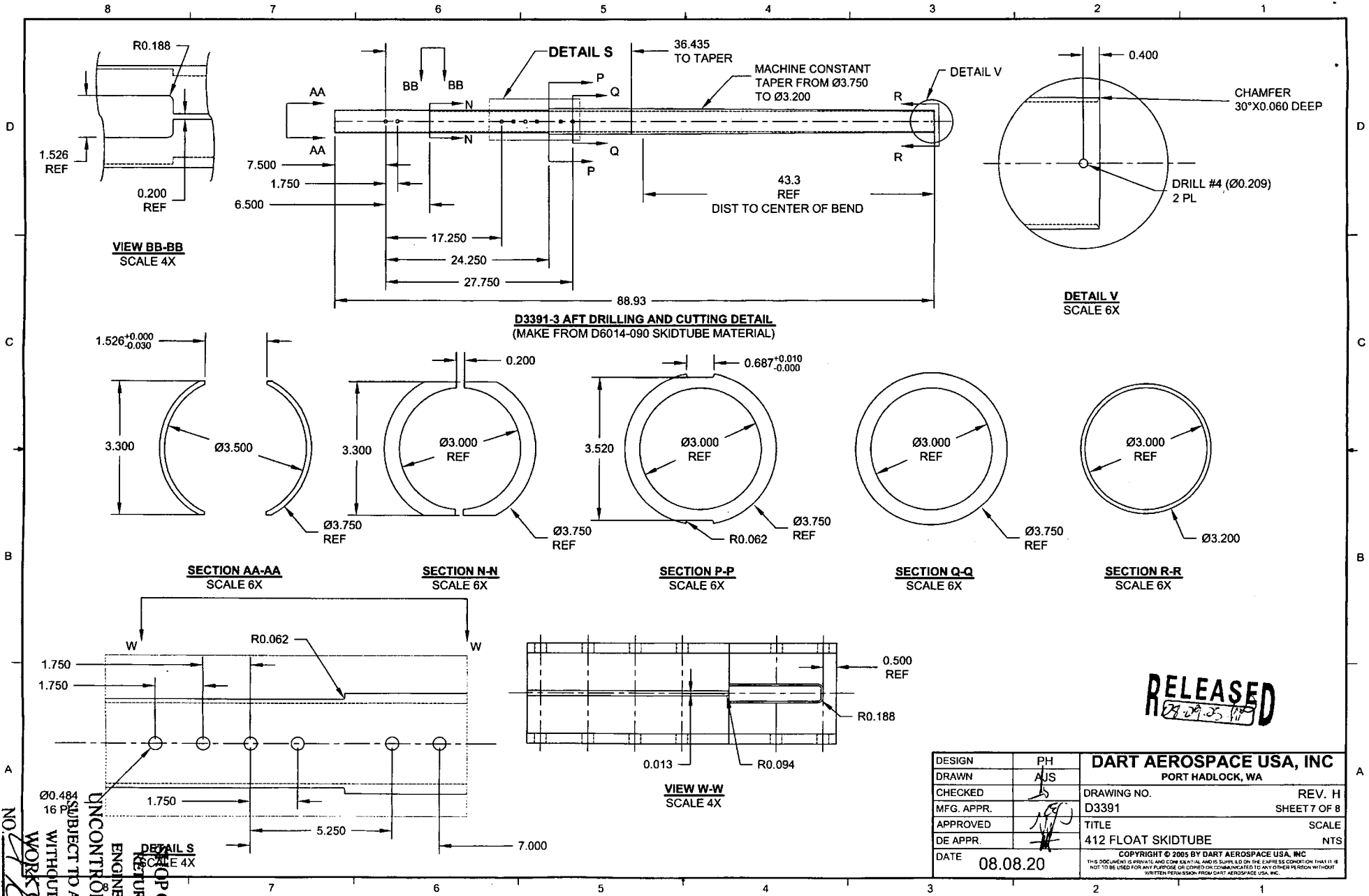
QTY -	PART NUMBER	DESCRIPTION
023		
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY
MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/291 PER QSI 015
INSTALL D3681-1 SPACER PER QSI 004

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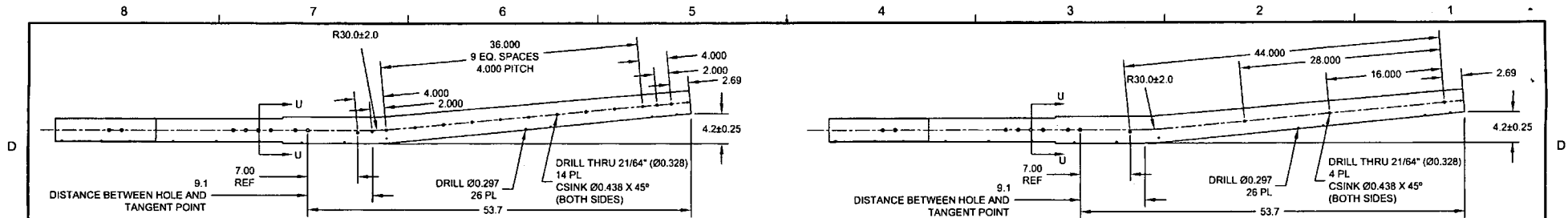
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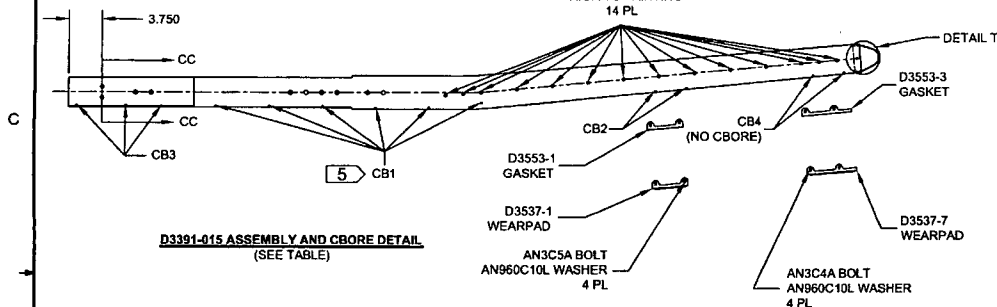
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D3391-015 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)

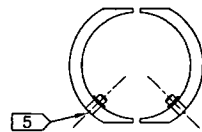
INSTALL D3670-4200 SPACER
SEAL WITH MAGNOBOND 6398
GRIND FLUSH
PRIOR TO PAINTING
14 PL



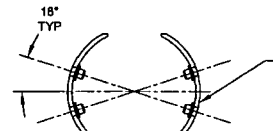
D3391-015 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)

D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST

QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X		D3391-015	AFT TUBE ASSEMBLY
	X	D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
14	14	AELS-1032-130	INSERT
12	12	AELS-1032-225	INSERT
4		ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER

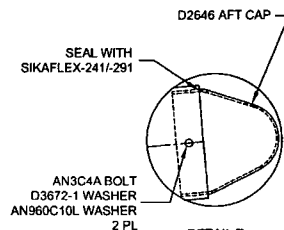


SECTION U-U
SCALE 3X



SECTION CC-CC
SCALE 3X

DRILL Ø0.391
CBORE Ø0.516 X 0.040 DEEP
INSTALL ALS4-428-165 INSERT
4 PL



DETAIL T
SCALE 4X

RELEASED
08-09-05 148

CBORE HOLES MARKED CB1-CB4 AS FOLLOWS AND
INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

HOLES MARKED	QTY D3391-015	QTY D3391-025	CBORE	P/N
CB1	12	12	Ø0.430 X 0.170	AELS-1032-225
CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130

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NO. 188

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 431700
Part number: 63391023
Description: Mid tube
Welding Process: Tig ☒ Mig ☐
Base material: Aluminium
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual: pass ☒ fail ☐
Penetration: pass ☒ fail ☐

UNACCEPTABLE

Cracks: pass ☒ fail ☐
Undercut: pass ☒ fail ☐
Pin holes: pass ☒ fail ☐
Overlap (cold lap): pass ☒ fail ☐
Porosity (surface): pass ☒ fail ☐
Coloration: pass ☒ fail ☐

Qualifier Pat. Duval Date of Test Coupon 09-01-21

Welder Barclay Elliott Date of Test Coupon 09-01-21

The above named individual is qualified in accordance with AWS D17.1.2001 to weld